J.T. MYERS POOL: OHIO RIVER, 2005

2005 Fish Management Report

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EXECUTIVE SUMMARY

- Eight sites were established within the J.T. Myers Pool of the Ohio River, which extends from J.T. Myers Locks and Dam to Newburgh Locks and Dam. Each site was approximately 1 mi in length and one h of effort was expended at each site during September 2005. Water quality, fish, and habitat data were collected at each site.

- The water quality data suggests that all parameters were within the range of adequate living conditions to maintain fish survival. The QHEI scores ranged from 26.5 to 37.0 and averaged 28.8 for all reaches.

- The fish sampling efforts yielded 4,505 fish weighing a total of 530.97 lbs. Thirty-five species and one hybrid were collected, representing 11 families. Sportfish comprised 20% of the total sample by number and 42% of the sample by weight.

- The most abundant species by number in this collection was gizzard shad (53%), followed by emerald shiner (14%), quillback (7%), and sauger (5%). All other species comprised less than 5% of the sample. Gizzard shad (14%) were the most abundant species collected by weight, followed by flathead catfish (10%), channel catfish (9%), smallmouth buffalo (9%), common carp (8%), spotted gar (8%), and white bass (6%).

- There was a slightly negative relationship between QHEI scores and number of species collected at each site, but it was not statistically significant. There was no statistical difference in species composition throughout the pool, however upstream sites (average fish/h = 746.75) had almost twice the number of fish caught per hour as downstream sites (average fish/h = 379.5).

- Continue to survey each pool at a regular interval to assess the Ohio River fishery and manage the populations so that sport and commercial fishing are sustainable throughout the Ohio River.

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INTRODUCTION

The Ohio River is one of the major tributaries of the Mississippi River. It is formed from the confluence of the Allegheny and Monongahela Rivers in Pittsburg, Pennsylvania and flows along the southern borders of Ohio, Indiana, and Illinois, where it joins the Mississippi River at Cairo, Illinois. The Army Corps of Engineers maintains a 9 ft navigation channel for the entire 981 mi length through a system of 20 locks and dams. Each lock and dam has transformed the once free-flowing river into a series of impoundments, which has altered fish community structure (Pearson and Krumholz 1984). These impoundments have led to the reduction in some riverine species and allowed increased abundance of those species suited for more lentic environments and invasive species (Pearson and Krumholz 1984). Both commercial and sport fishing are allowed on the entire Indiana portion of the Ohio River.

Indiana shares 87,014 acres of the Ohio River with Kentucky, which includes five locks and dams. The J.T. Myers and Newburgh Locks and Dam create a 69.9 mi long impoundment, making J.T. Myers Pool one of the shortest impoundments in the Indiana stretch of the Ohio River. A limited survey was conducted in this pool during September 1992 (Stefanavage 1994) from RM 777.50 to RM 797.00 with different methods. However, Indiana has never characterized the fish population of the Ohio River. Each pool of the Ohio River is a vast resource and the lack of baseline information limits our ability to maintain and improve fishing opportunities and evaluate current fishing regulations.

METHODS

Eight sites were established within the J.T. Myers Pool of the Ohio River, which extends from J.T. Myers Locks and Dam (RM 846.0) to Newburgh Locks and Dam (RM 776.1) (Figure 1; Table 1). Collection locations are identified by the shore sampled (IN or KY), the river mile, and whether the site was sampled during the day (D) or night (N). Each site was approximately 1 mi in length. The Indiana bank was sampled unless the site name begins with KY, with 1 h of effort from September 6 through September 14, 2005. Water chemistry data was collected at each site according to the Manual of Fisheries Survey Methods (Shipman 2001). Habitat data was collected and scored at each site according to the Qualitative Habitat Evaluation Index (QHEI) (Rankin 1989). Fish were sampled using boat-mounted DC electrofishing gear with two dip netters. All fish were measured to the nearest 0.1 in TL. Fish weights were measured and

recorded to the nearest 0.01 lb. Scales were collected from all sportfish species and pectoral spines were collected from all catfish species.

RESULTS

Water chemistry and fish habitat

The water quality data suggests that all parameters were within the range of adequate living conditions to maintain fish survival (Table 2). Secchi disk measurements ranged from 28.0 to 37.0 in. The water temperature at the time of sampling varied from 77.0 to 84.0 °F. Dissolved oxygen remained within the limits of fish survival at all sites, with a range of 8 to 11 ppm.

The QHEI scores ranged from 26.5 to 37.0 and averaged 28.8 for all reaches (Table 3). The highest score was determined from the site located at RM KY 821.8 N while the site located at RM IN 783.75 N had the lowest score.

Fish survey data

The fish sampling efforts yielded 4,505 fish weighing a total of 530.97 lbs. Thirty-five species and one hybrid were collected, representing 11 families. The most abundant species by number in this collection was gizzard shad (53%), followed by emerald shiner (14%), quillback (7%), and sauger (5%). All other species comprised less than 5% of the sample. Gizzard shad (14%) were the most abundant species collected by weight, followed by flathead catfish (10%), channel catfish (9%), smallmouth buffalo (9%), common carp (8%), spotted gar (8%), and white bass (6%). RM IN 821.8 N yielded the most diverse collection with 20 species, while the least diverse site was RM KY 821.8 N with only 16 species collected. Sportfish collected during this survey included sauger, white bass, striped bass, freshwater drum, largemouth bass, flathead catfish, channel catfish, spotted bass, hybrid striped bass, bluegill, smallmouth bass, black crappie, yellow bass, and white crappie. Sportfish comprised 20% of the total sample by number and 42% of the sample by weight.

Herring family (Clupeidae)

Gizzard shad, skipjack herring, and threadfin shad were collected from the Clupeidae family. This family comprised a little over 55% of the total sample by number and 15% by

weight. Gizzard shad was the most abundant species in this family collected, followed by skipjack herring, with only a small number of threadfin shad collected.

Carp and minnow family (Cyprinidae)

Members of the Cyprinidae family comprised 15% of the total fish collected, but only 9% of total weight. There were a total of five species collected in this family, with emerald shiner the most abundant, followed by silver chub and common carp.

Sucker family (Catostomidae)

Four species were collected from the Catostomidae family. Almost 9% of the total fish collected were in the Sucker family; however they did represent 18% of the total weight. Some of the most abundant species of this family that were collected were quillback and river carpsucker. Smallmouth buffalo and highfin carpsucker were collected in small numbers.

Temperate bass family (Moronidae)

The Moronidae family was represented by three species and a hybrid in the collection, accounting for 7% of the total number and over 7% of the total weight. White bass were the most abundant member of the Moronidae family. They were collected at six sampling locations and ranged from 3.4 to 12.9 in TL.

Striped bass were the next most abundant Morone species, being collected from all eight sampling sites. Striped bass ranged from 2.1 to 7.6 in TL.

Hybrid striped bass and yellow bass composed less than 1% of the total sample by number and weight. Hybrid striped bass were collected from five sampling locations, while yellow bass were collected at two sites.

Perch family (Percidae)

Sauger were the most abundant species in the Percidae family, accounting for a little over 5% of the total sample by number and over 5% by weight. Sauger were collected at all eight sites and ranged from 4.9 to 16.4 in TL.

Only one logperch was collected.

Drum family (Sciaenidae)

Freshwater drum is the only freshwater member of this family found in North America. Freshwater drum accounted for 3% of the total sample by number and over 3% of the total weight. Freshwater drum were collected at all sampling locations and ranged from 2.9 to 20.2 in TL.

Sunfish family (Centrarchidae)

With nine species being collected in the Centrarchidae family, it was the most diverse family. The Centrarchidae family represented over 2% of the total collection by number and almost 7% of the sample by weight. Largemouth bass were collected at all eight sites and were the most abundant sunfish species, ranging from 3.6 to 15.2 in TL.

Bluegill was the next most common Centrarchidae species, although they comprised less than 1% of the total sample both by weight and number. The largest bluegill collected was 7.7 in TL.

Smallmouth bass were collected at three of the sampling locations and accounted for less than 1% of the total sample. Smallmouth bass ranged from 7.2 to 7.6 in TL.

Black crappie were collected at two sampling locations. Black crappie ranged from 9.0 to 10.2 in TL.

Longear sunfish, green sunfish, orangespotted sunfish, and white crappie were collected in small numbers.

Bullhead catfish family (Ictaluridae)

Two species of the Ictaluridae family were collected, accounting for almost 2% of the total number and 19% of the total weight. The most abundant catfish species was flathead catfish, representing 1% of the total sample by number and 10% by weight. Flathead catfish were collected at all sampling sites and ranged from 8.7 to 21.7 in TL.

Channel catfish represented less than 1% of the total catch by number, but a little over 9% of the total weight. Channel catfish were collected at all eight sites. Channel catfish ranged from 3.0 to 24.5 in TL.

Gar family (Lepisosteidae)

Three species of this family were collected, spotted, longnose, and shortnose gar, with spotted gar the most abundant. The Lepisosteidae family accounted for almost 1% of the total sample by number and 16% by weight.

Mooneye family (Hiodontidae)

Goldeye and mooneye were collected from the Hiodontidae family, representing less than 1% of the sample both by total number and weight.

Silverside family (Atherinidae)

A brook silverside was collected at one site and comprised less than 1% of the total sample by number and weight.

DISCUSSION

The goal of this project was to create a baseline data set that would include water quality, fish habitat, and fisheries data, so that we can better understand and manage the Ohio River fisheries resources. By building on this data set with continued sampling at regular intervals, the department will be able to evaluate current commercial and sport fishing regulations and make necessary changes to promote viable populations that will support fishing.

There was a slightly negative relationship between QHEI scores and number of species collected at each site, but it was not statistically significant. At the site with the lowest QHEI score 19 species were collected and at the site with the highest QHEI score 16 species were collected. A total of 35 species and one hybrid were collected at all sites. Since only one method of collection (electrofishing) was used it is probable that many species were missed in the sample. There was no statistical difference in species composition throughout the pool, however upstream sites (average fish/h = 746.75) had almost twice the number of fish caught per h as downstream sites (average fish/h = 379.50). Sites located on the inside bend of the river produced more fish/h on average (654.75) and a lower QHEI score (26.9), than the outside bend (471.5 fish/h) (QHEI score = 31).

Fourteen sportfish species were collected which comprised 20% of the sample by number and 42% by weight. Sauger, white bass, striped bass, and freshwater drum were the most

abundant sportfish species, but most sportfish were collected in low numbers relative to other non-game species, which is expected. There were large sample sizes of sauger, white bass, striped bass, and freshwater drum, however the samples were dominated by smaller fish. The absence of multiple larger fish prevented any analysis of age and growth characteristics.

Although day shocking was utilized during the survey that was conducted in 1992 on a limited portion of the J.T. Myers Pool, it still allows some comparison of the fish community over time. In 1992, the average number of fish caught per hour was 377, while in 2005 with the night shocking, the average caught per hour was 562, so it appears that the night shocking is more effective. However, the collections did not differ in the total lbs of fish caught; this is probably due to the lack of numerous larger fish in the 2005 sample. In 1992, the collection included 29 species and 10 families, which was less than the 35 species and 11 families that were collected in 2005. Five species were collected in 1992 that were not collected in 2005, black buffalo, shorthead redhorse, golden redhorse, freckled madtom, and river darter. In 2005, skipjack herring, spotted gar, smallmouth buffalo, smallmouth bass, black crappie, silver carp, yellow bass, brook silverside, green sunfish, orangespotted sunfish, sand shiner, and one hybrid (hybrid striped bass) were added to the species list. Since day shocking and fewer sites were sampled in 1992, it is apparent that night shocking and the coverage of more habitat is the more efficient method to collect a diverse and representative sample.

RECOMMENDATIONS

- Continue to survey each pool at a regular interval to assess the Ohio River fishery and manage the populations so that sport and commercial fishing are sustainable throughout the Ohio River.

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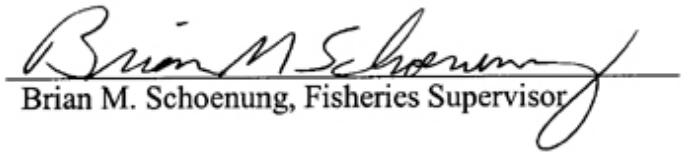
Approved by: 
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Date: May 7, 2008

Table 1. Station location, average width, and gradient for the Ohio River, J.T. Myers Pool, 2005.

River Mile	County	Nearest Town	Average Width (ft)	Gradient (ft)
IN 776.5	Warrick	Newburg	2640	0.28
IN 783.75	Vanderburgh	Evansville	2640	0.28
IN 796.7	Vanderburgh	West Frankland	2640	0.28
IN 803.75	Vanderburgh	Henderson, KY	2640	0.28
IN 821.8	Posey	Mt. Vernon	2640	0.28
KY 821.8	Posey	Mt. Vernon	2640	0.28
IN 839.5	Posey	Mt. Vernon	2640	0.28
KY 839.5	Posey	Mt. Vernon	2640	0.28

Table 2. Station water chemistry information, Ohio River, J.T. Myers Pool, 2005.

River Mile	Secchi Disk (in.)	Air Temperature (°F)	Water Temperature (°F)	Dissolved Oxygen (ppm)
IN 776.5 N	37.0		84.0	10
IN 783.75 N	37.0		84.0	10
IN 796.7 N	28.0	85.0	77.0	8
IN 803.75 N	28.0	85.0	77.0	8
IN 821.8 N	34.0	76.0	80.0	11
KY 821.8 N	34.0	76.0	80.0	11
IN 839.5 N	34.0	82.0	82.0	10
KY 839.5 N	34.3	82.0	82.0	10

Table 3. Station Qualitative Habitat Evaluation Index (QHEI) metric component scores, Ohio River, J.T. Myers, Pool, 2005.

River Mile	Substrate Max. 20	Cover Max. 20	Channel Max. 20	Riparian Max. 10	Pool Max. 12	Riffle Max. 8	Gradient Max. 10	Total 100	Percent Pool	Percent Run	Percent Riffle
IN 776.5 N	3	7	10	4.5	0	0	6	30.5	0	100	0
IN 783.75 N	2	5	10	3.5	0	0	6	26.5	0	100	0
IN 796.7 N	2	6	10	4.5	0	0	6	28.5	0	100	0
IN 803.75 N	2	5	10	4	0	0	6	27.0	0	100	0
IN 821.8 N	2	5	10	4	0	0	6	27.0	0	100	0
KY 821.8 N	9	8	10	4	0	0	6	37.0	0	100	0
IN 839.5 N	2	5	10	4	0	0	6	27.0	0	100	0
KY 839.5 N	2	5	10	4	0	0	6	27.0	0	100	0

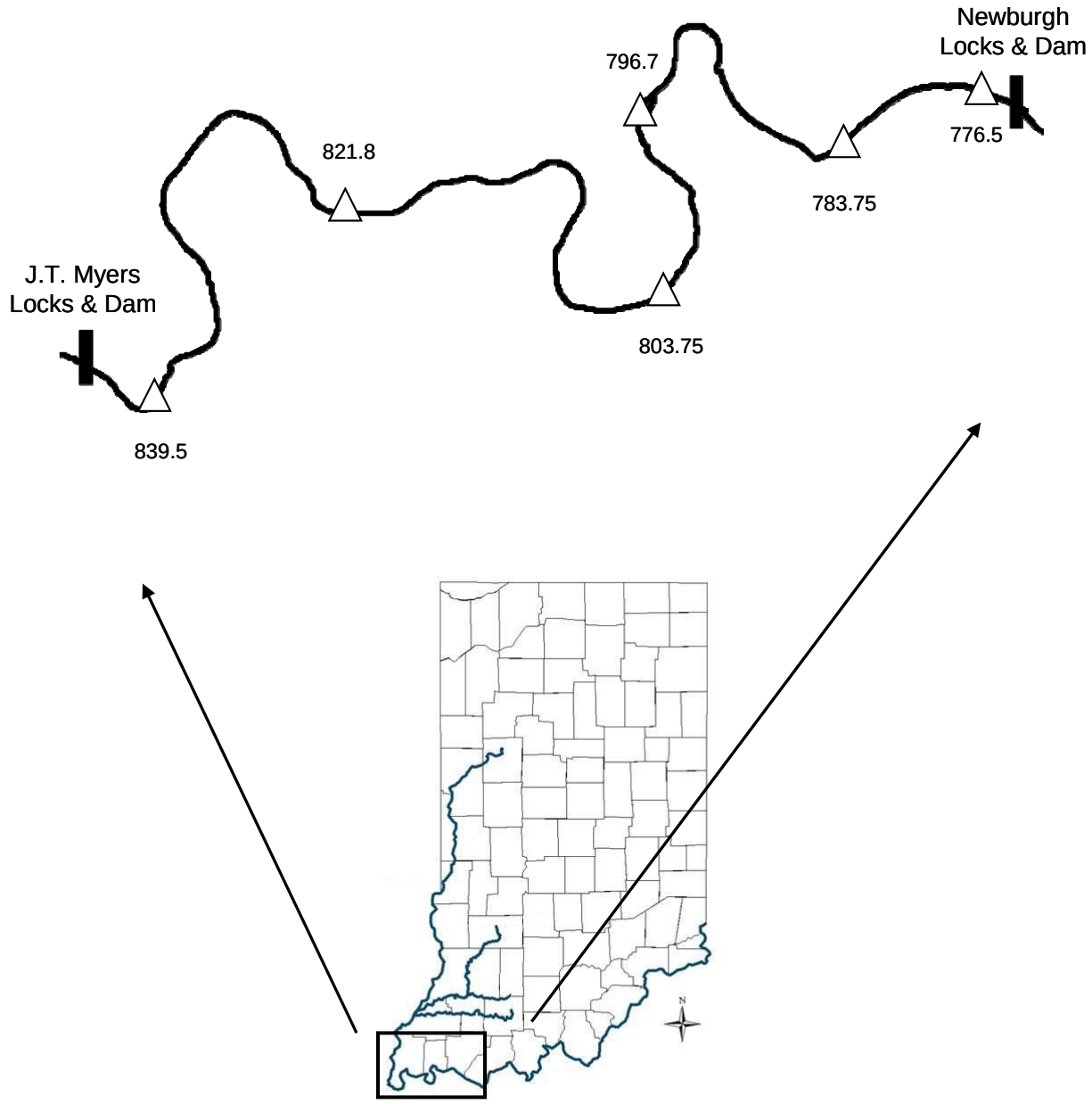

Figure 1. Sampling sites in the J.T. Myers Pool, Ohio River, 2005.

APPENDIX A

NAME, NUMBER, PERCENTAGE, SIZE, WEIGHT, AND OCCURRENCE INDEX OF FISHES COLLECTED, J.T. MYERS POOL, OHIO RIVER, SEPTEMBER, 2005.

Appendix A. Name, number, percentage, size, weight, and occurrence index of fish collected, J.T. Myers Pool, Ohio River, September 2005 (electrofishing).

Common Name	Scientific Name	Total Number	% by Number	Size Range (in)	Total Weight (lb)	% by Weight	Occurrence Index
Gizzard shad	Dorosoma cepedianum	2,383	52.9	1.9 - 12.2	75.65	14.2	8
Emerald shiner	Notropis atherinoides	639	14.2	1.2 - 3.8	3.39	0.6	8
Quillback	Carpiodes cyprinus	306	6.8	3.3 - 16.7	28.36	5.3	8
Sauger	Sander canadense	238	5.3	4.9 - 16.4	27.54	5.2	8
White bass	Morone chrysops	165	3.7	3.4 - 12.9	30.77	5.8	6
Striped bass	Morone saxatilis	143	3.2	2.1 - 7.6	7.08	1.3	8
Freshwater drum	Aplodinotus grunniens	140	3.1	2.9 - 20.2	17.33	3.3	8
Skipjack herring	Alosa chrysochloris	108	2.4	2.9 - 7.5	2.48	0.5	8
River carpsucker	Carpiodes carpio	75	1.7	4.6 - 14.0	22.79	4.3	4
Largemouth bass	Micropterus salmoides	72	1.6	3.6 - 15.2	26.18	4.9	8
Flathead catfish	Pylodictis olivaris	45	1.0	8.7 - 21.7	52.22	9.8	8
Channel catfish	Ictalurus punctatus	35	0.8	3.0 - 24.5	48.69	9.2	8
Silver chub	Macrhybopsis storeriana	32	0.7	2.0 - 4.0	0.49	0.1	4
Spotted gar	Lepisosteus oculatus	17	0.4	21.2 - 28.5	41.00	7.7	2
Spotted bass	Micropterus punctulatus	14	0.3	5.8 - 15.1	5.52	1.0	4
Shortnose gar	Lepisosteus platostomus	11	0.2	21.8 - 26.5	17.79	3.4	4
Longnose gar	Lepisosteus osseus	9	0.2	19.3 - 47.0	27.38	5.2	4
Smallmouth buffalo	Ictiobus bubalus	9	0.2	19.7 - 23.3	45.96	8.7	3
Common carp	Cyprinus carpio	8	0.2	12.1 - 26.3	43.34	8.2	5
Goldeye	Hiodon alosoides	8	0.2	4.2 - 5.6	0.22	*	2
Hybrid striped bass	Morone saxatilis x chrysops	8	0.2	5.1 - 7.5	1.15	0.2	5
Mooneye	Hiodon tergisus	7	0.2	4.0 - 8.5	0.39	0.1	3
Bluegill	Lepomis macrochirus	6	0.1	2.9 - 7.7	1.03	0.2	2
Smallmouth bass	Micropterus dolomieu	5	0.1	7.2 - 7.6	1.03	0.2	3
Threadfin shad	Dorosoma petenense	5	0.1	3.9 - 4.3	0.15	*	4
Black crappie	Pomoxis nigromaculatus	3	0.1	9.0 - 10.2	1.72	0.3	2
Highfin carpsucker	Carpiodes velifer	2	*	6.4 - 6.9	0.31	0.1	1
Longear sunfish	Lepomis megalotis	2	*	2.8 - 2.9	0.03	*	1
Silver carp	Hypophthalmichthys molitrix	2	*	6.7 - 7.4	0.28	0.1	2
Yellow bass	Morone mississippiensis	2	*	7.0 - 7.6	0.40	0.1	2
Brook silverside	Labidesthes siculus	1	*	3.0	*	*	1
Green sunfish	Lepomis cyanellus	1	*	3.1	0.02	*	1
Logperch	Percina caprodes	1	*	3.4	*	*	1
Orangespotted sunfish	Lepomis humilis	1	*	3	0.02	*	1
Sand shiner	Notropis stramineus	1	*	1.6	*	*	1
White crappie	Pomoxis annularis	1	*	8.2	0.26	*	1
TOTALS:		4,505			530.97		

35 Species & 1 Hybrid

*=Less than 0.1% or 0.01 lbs.

APPENDIX B

SPECIES, NUMBER, AND WEIGHT OF FAMILIES COLLECTED, J.T. MYERS POOL, OHIO RIVER, SEPTEMBER, 2005.

Appendix B. Species, number, and weight of families collected from J.T. Myers Pool, Ohio River, September, 2005.

Family	Total Number	% by Number	Total Weight	% by Weight
Clupeidae - Herrings	2,496	55.4	78.28	14.7
Gizzard shad, Threadfin shad, Skipjack herring				
Cyprinidae - Carps and Minnows	682	15.1	47.50	8.9
Emerald shiner, Silver carp, Silver chub, Sand shiner, Common carp				
Catostomidae - Suckers	392	8.7	97.42	18.3
Quillback, Smallmouth buffalo, River carpsucker, Highfin carpsucker				
Percichthyidae - Temperate Bass	318	7.1	39.40	7.4
White bass, Hybrid striped bass, Striped bass, Yellow bass				
Percidae - Perches	239	5.3	27.54	5.2
Sauger, Logperch				
Sciaenidae - Drums	140	3.1	17.33	3.3
Freshwater drum				
Centrarchidae - Sunfishes	105	2.3	35.81	6.7
Largemouth bass, Longear sunfish, Spotted bass, Green sunfish, Bluegill, Orangespotted sunfish, Smallmouth bass, White crappie, Black crappie				
Ictaluridae - Bullhead Catfish	80	1.8	100.91	19.0
Flathead catfish, Channel catfish				
Lepisosteidae - Gars	37	0.8	86.17	16.2
Spotted gar, Longnose gar, Shortnose gar				
Hiodontidae - Mooneyes	15	0.3	0.61	0.1
Goldeye, Mooneye				
Atherinidae - Silversides	1	*	*	*
Brook silverside				
TOTALS:	4,505		530.97	

35 Species & 1 Hybrid
*=Less than 0.1%.

APPENDIX C

NUMBER OF FISH SPECIES COLLECTED PER STATION, J.T. MYERS POOL, OHIO RIVER, 2005.

Appendix C. Number of fish species collected per station, J.T. Myers Pool, Ohio River, 2005.

	RIVER MILE								
COMMON NAME	IN 776.50	IN 783.75	IN 796.70	IN 803.75	IN 821.80	KY 821.80	IN 839.50	KY 839.50	Total
Gizzard shad	161	646	573	392	276	132	100	103	2,383
Emerald shiner	5	115	50	133	13	177	9	137	639
Quillback	5	63	8	120	63	18	19	10	306
Sauger	20	14	47	107	26	14	7	3	238
White bass	48	91	14	7	2	3			165
Striped bass	27	28	10	24	9	13	18	14	143
Freshwater drum	1	2	5	15	32	34	6	45	140
Skipjack herring	3	4	9	37	3	44	4	4	108
River carpsucker		3	1	70				1	75
Largemouth bass	31	2	6	6	8	7	6	6	72
Flathead catfish	7	5	1	3	5	6	7	11	45
Channel catfish	2	1	1	9	3	1	8	10	35
Silver chub				6	11	5	10		32
Spotted gar							13	4	17
Spotted bass	1	8	1		4				14
Shortnose gar		3			4	3	1		11
Longnose gar	1	5	2	1					9
Smallmouth buffalo		1			4			4	9
Common carp			1	2	2		1	2	8
Goldeye							1	7	8
Hybrid striped bass	2	3	1			1	1		8
Mooneye				1		1		5	7
Bluegill							3	3	6
Smallmouth bass	2		1					2	5
Threadfin shad	1				1	2	1		5
Black crappie	1	2							3
Highfin carpsucker				2					2
Longear sunfish	2								2
Silver carp			1		1				2
Yellow bass		1		1					2
Brook silverside					1				1
Green sunfish					1				1
Logperch								1	1
Orangespotted sunfish							1		1
Sand shiner				1					1
White crappie	1								1
Total # Collected	321	997	732	937	469	461	216	372	4,505
# Species/Hybrids	19	19	18	19	20	16	19	19	36

APPENDIX D

NAME, NUMBER, PERCENT, SIZE, AND WEIGHT OF FISH COLLECTED AT EACH STATION.

DATE: 09/06/2005 STATION: IN RM 776.50

NAME OF STREAM: Ohio River Myers Pool

NAME, NUMBER, PERCENTAGE, SIZE, AND WEIGHT OF FISHES COLLECTED

COMMON NAME	NUMBER	PERCENTAGE	SIZE RANGE (INCHES)	TOTAL WEIGHT (POUNDS)	PERCENTAGE
Gizzard shad	161	50.2	1.9 - 9.9	6.15	14.0
White bass	48	15.0	4.9 - 7.6	7.40	16.8
Largemouth bass	31	9.7	6.7 - 9.7	10.09	23.0
Striped bass	27	8.4	4.5 - 7.6	2.08	4.7
Sauger	20	6.2	5.6 - 8.1	1.91	4.3
Flathead catfish	7	2.2	10.3 - 17.1	6.39	14.5
Emerald shiner	5	1.6	2.1 - 3.5	0.01	0.0
Quillback	5	1.6	5.2 - 5.4	0.50	1.1
Skipjack herring	3	0.9	3.5 - 7.2	0.21	0.5
Channel catfish	2	0.6	19.8 - 20.5	5.80	13.2
Hybrid striped bass	2	0.6	6.6 - 7.5	0.38	0.9
Longear sunfish	2	0.6	2.8 - 2.9	0.03	0.1
Smallmouth bass	2	0.6	7.2 - 7.6	0.42	1.0
Black crappie	1	0.3	10.2	0.70	1.6
Freshwater drum	1	0.3	4.4	0.03	0.1
Longnose gar	1	0.3	28	1.41	3.2
Spotted bass	1	0.3	6.6	0.15	0.3
Threadfin shad	1	0.3	4.3	0.03	0.1
White crappie	1	0.3	8.2	0.26	0.6
Total - 19 Species / Hybrids	321	100.0		43.95	100.0

DATE: 09/06/2005 STATION: IN RM 783.75

NAME OF STREAM: Ohio River Myers Pool

NAME, NUMBER, PERCENTAGE, SIZE, AND WEIGHT OF FISHES COLLECTED

COMMON NAME	NUMBER	PERCENTAGE	SIZE RANGE (INCHES)	TOTAL WEIGHT (POUNDS)	PERCENTAGE
Gizzard shad	646	64.8	2.1 - 12.0	13.60	16.1
Emerald shiner	115	11.5	1.2 - 3.5	0.47	0.6
White bass	91	9.1	4.5 - 12.9	18.20	21.5
Quillback	63	6.3	4.5 - 6.3	4.80	5.7
Striped bass	28	2.8	3.0 - 7.0	1.79	2.1
Sauger	14	1.4	6.6 - 16.4	3.66	4.3
Spotted bass	8	0.8	6.6 - 10.8	2.85	3.4
Flathead catfish	5	0.5	11.6 - 13.8	3.75	4.4
Longnose gar	5	0.5	19.3 - 47.0	19.75	23.3
Skipjack herring	4	0.4	2.9 - 5.4	0.08	0.1
Hybrid striped bass	3	0.3	5.1 - 6.1	0.32	0.4
River carpsucker	3	0.3	13.4 - 14.0	3.84	4.5
Shortnose gar	3	0.3	21.8 - 22.9	3.93	4.6
Black crappie	2	0.2	9.0 - 9.5	1.02	1.2
Freshwater drum	2	0.2	3.8 - 11.3	0.68	0.8
Largemouth bass	2	0.2	9.0 - 15.2	2.19	2.6
Channel catfish	1	0.1	16.4	1.24	1.5
Smallmouth buffalo	1	0.1	19.7	2.20	2.6
Yellow bass	1	0.1	7.6	0.22	0.3
Total - 19 Species	997	100.0		84.59	100.0

DATE: 09/07/2005 STATION: IN RM 796.70

NAME OF STREAM: Ohio River Myers Pool

NAME, NUMBER, PERCENTAGE, SIZE, AND WEIGHT OF FISHES COLLECTED

COMMON NAME	NUMBER	PERCENTAGE	SIZE RANGE (INCHES)	TOTAL WEIGHT (POUNDS)	PERCENTAGE
Gizzard shad	573	78.3	2.0 - 10.5	15.80	30.0
Emerald shiner	50	6.8	2.1 - 3.8	0.37	0.7
Sauger	47	6.4	4.9 - 14.3	5.81	11.0
White bass	14	1.9	6.1 - 12.2	3.34	6.3
Striped bass	10	1.4	3.1 - 7.4	0.97	1.8
Skipjack herring	9	1.2	3.0 - 4.0	0.07	0.1
Quillback	8	1.1	5.0 - 16.7	2.25	4.3
Largemouth bass	6	0.8	6.7 - 11.1	1.88	3.6
Freshwater drum	5	0.7	3.2 - 10.3	0.63	1.2
Longnose gar	2	0.3	26.4 - 35.0	5.60	10.6
Channel catfish	1	0.1	19	2.30	4.4
Common carp	1	0.1	26.3	8.46	16.0
Flathead catfish	1	0.1	15.2	1.40	2.7
Hybrid striped bass	1	0.1	7.3	0.18	0.3
River carpsucker	1	0.1	13.8	1.32	2.5
Silver carp	1	0.1	6.7	0.10	0.2
Smallmouth bass	1	0.1	7.3	0.19	0.4
Spotted bass	1	0.1	15.1	2.08	3.9
Total - 18 Species / Hybrids	732	100.0		52.75	100.0

DATE: 09/07/2005 STATION: IN RM 803.75

NAME OF STREAM: Ohio River Myers Pool

NAME, NUMBER, PERCENTAGE, SIZE, AND WEIGHT OF FISHES COLLECTED

COMMON NAME	NUMBER	PERCENTAGE	SIZE RANGE (INCHES)	TOTAL WEIGHT (POUNDS)	PERCENTAGE
Gizzard shad	392	41.8	2.9 - 11.5	17.70	21.1
Emerald shiner	133	14.2	1.6 - 3.7	0.95	1.1
Quillback	120	12.8	4.6 - 7.4	12.00	14.3
Sauger	107	11.4	4.9 - 8.9	10.87	12.9
River carpsucker	70	7.5	4.6 - 13.8	17.59	21.0
Skipjack herring	37	3.9	2.9 - 6.9	0.45	0.5
Striped bass	24	2.6	2.9 - 6.6	0.72	0.9
Freshwater drum	15	1.6	3.1 - 9.5	0.52	0.6
Channel catfish	9	1.0	4.7 - 21.0	5.29	6.3
White bass	7	0.7	5.4 - 7.2	1.04	1.2
Largemouth bass	6	0.6	3.9 - 9.1	1.46	1.7
Silver chub	6	0.6	3.4 - 3.8	0.09	0.1
Flathead catfish	3	0.3	10.7 - 14.9	2.58	3.1
Common carp	2	0.2	18.6 - 26.3	11.56	13.8
Highfin carpsucker	2	0.2	6.4 - 6.9	0.31	0.4
Longnose gar	1	0.1	21.5	0.62	0.7
Mooneye	1	0.1	4.5	0.02	0.0
Sand shiner	1	0.1	1.6	0.00	0.0
Yellow bass	1	0.1	7.0	0.18	0.2
Total - 19 Species	937	100.0		83.95	100.0

DATE: 09/13/2005 STATION: IN RM 821.8 Night

NAME OF STREAM: Ohio River Myers Pool

NAME, NUMBER, PERCENTAGE, SIZE, AND WEIGHT OF FISHES COLLECTED

COMMON NAME	NUMBER	PERCENTAGE	SIZE RANGE (INCHES)	TOTAL WEIGHT (POUNDS)	PERCENTAGE
Gizzard shad	276	58.8	2.8 - 12.2	10.00	13.3
Quillback	63	13.4	5.4 - 6.2	4.80	6.4
Freshwater drum	32	6.8	3.0 - 18.8	4.06	5.4
Sauger	26	5.5	5.5 - 9.0	3.01	4.0
Emerald shiner	13	2.8	2.4 - 3.4	0.05	0.1
Silver chub	11	2.3	3.3 - 4.0	0.24	0.3
Striped bass	9	1.9	3.1 - 7.2	0.41	0.5
Largemouth bass	8	1.7	6.8 - 11.3	2.75	3.7
Flathead catfish	5	1.1	14.6 - 17.9	7.24	9.7
Shortnose gar	4	0.9	23.7 - 25.3	6.78	9.0
Smallmouth buffalo	4	0.9	19.7 - 23.3	21.88	29.2
Spotted bass	4	0.9	5.8 - 6.3	0.44	0.6
Channel catfish	3	0.6	14.6 - 20.2	4.36	5.8
Skipjack herring	3	0.6	3.2 - 7.5	0.19	0.3
Common carp	2	0.4	12.1 - 25.0	8.15	10.9
White bass	2	0.4	7.4 - 7.6	0.40	0.5
Brooke silverside	1	0.2	3.0	0.00	0.0
Green sunfish	1	0.2	3.1	0.02	0.0
Silver carp	1	0.2	7.4	0.18	0.2
Threadfin shad	1	0.2	3.9	0.02	0.0
Total - 20 Species	469	100.0		74.98	100.0

DATE: 09/13/2005 STATION: KY RM 821.80 Night

NAME OF STREAM: Ohio River Myers Pool

NAME, NUMBER, PERCENTAGE, SIZE, AND WEIGHT OF FISHES COLLECTED

COMMON NAME	NUMBER	PERCENTAGE	SIZE RANGE (INCHES)	TOTAL WEIGHT (POUNDS)	PERCENTAGE
Emerald shiner	177	38.4	1.5 - 3.6	0.91	4.1
Gizzard shad	132	28.6	2.0 - 8.4	3.51	15.7
Skipjack herring	44	9.5	3.5 - 6.8	0.99	4.4
Freshwater drum	34	7.4	3.0 - 4.5	0.63	2.8
Quillback	18	3.9	4.7 - 7.3	2.09	9.3
Sauger	14	3.0	5.0 - 8.5	1.09	4.9
Striped bass	13	2.8	2.6 - 6.9	0.40	1.8
Largemouth bass	7	1.5	3.6 - 8.9	1.26	5.6
Flathead catfish	6	1.3	8.7 - 18.0	5.47	24.4
Silver chub	5	1.1	3.6 - 3.7	0.08	0.4
Shortnose gar	3	0.7	23.4 - 24.4	4.79	21.4
White bass	3	0.7	3.4 - 7.2	0.39	1.7
Threadfin shad	2	0.4	4.1	0.06	0.3
Channel catfish	1	0.2	8.3	0.37	1.7
Hybrid striped bass	1	0.2	7.4	0.18	0.8
Mooneye	1	0.2	8.5	0.20	0.9
Total - 16 Species / Hybrids	461	100.0		22.42	100.0

DATE:9/14/2005 STATION: RM IN 839.50 Night

NAME OF STREAM: Ohio River Myers Pool

NAME, NUMBER, PERCENTAGE, SIZE, AND WEIGHT OF FISHES COLLECTED

COMMON NAME	NUMBER	PERCENTAGE	SIZE RANGE (INCHES)	TOTAL WEIGHT (POUNDS)	PERCENTAGE
Gizzard shad	100	46.3	2.2 - 11.3	6.30	7.4
Quillback	19	8.8	3.3 - 6.2	1.26	1.5
Striped bass	18	8.3	2.1 - 5.2	0.32	0.4
Spotted gar	13	6.0	21.2 - 28.5	33.10	39.1
Silver chub	10	4.6	2.0 - 3.6	0.08	0.1
Emerald shiner	9	4.2	1.4 - 2.9	0.04	0.0
Channel catfish	8	3.7	13.7 - 24.5	19.61	23.1
Flathead catfish	7	3.2	11.5 - 16.9	8.22	9.7
Sauger	7	3.2	5.8 - 7.9	0.73	0.9
Freshwater drum	6	2.8	2.9 - 17.6	2.63	3.1
Largemouth bass	6	2.8	6.4 - 12.7	3.14	3.7
Skipjack herring	4	1.9	3.5 - 6.8	0.23	0.3
Bluegill	3	1.4	3.2 - 7.7	0.59	0.7
Common carp	1	0.5	23.4	6.04	7.1
Goldeye	1	0.5	4.2	0.02	0.0
Hybrid striped bass	1	0.5	5.4	0.09	0.1
Orangespotted sunfish	1	0.5	3.0	0.02	0.0
Shortnose gar	1	0.5	26.5	2.29	2.7
Threadfin shad	1	0.5	4.2	0.04	0.0
Total - 19 Species/Hybrids	216	100.0		84.75	100.0

DATE: 9/14/2005

STATION: RM KY 839.50 Night

NAME OF STREAM: Ohio River Myers Pool

NAME, NUMBER, PERCENTAGE, SIZE, AND WEIGHT OF FISHES COLLECTED

COMMON NAME	NUMBER	PERCENTAGE	SIZE RANGE (INCHES)	TOTAL WEIGHT (POUNDS)	PERCENTAGE
Emerald shiner	137	36.8	1.5 - 3.6	0.59	0.7
Gizzard shad	103	27.7	2.6 - 5.1	2.59	3.1
Freshwater drum	45	12.1	2.9 - 20. 2	8.15	9.8
Striped bass	14	3.8	3.1 - 7.1	0.39	0.5
Flathead catfish	11	3.0	11.1 - 21.7	17.17	20.5
Channel catfish	10	2.7	3.0 - 19.6	9.72	11.6
Quillback	10	2.7	4.4 - 5.4	0.66	0.8
Goldeye	7	1.9	4.3 - 5.6	0.20	0.2
Largemouth bass	6	1.6	6.7 - 13.5	3.41	4.1
Mooneye	5	1.3	4.0 - 4.9	0.17	0.2
Skipjack herring	4	1.1	4.6 - 7.5	0.26	0.3
Smallmouth buffalo	4	1.1	20.1 - 23.3	21.88	26.2
Spotted gar	4	1.1	21.5 - 25.5	7.90	9.5
Bluegill	3	0.8	2.9 - 7.0	0.44	0.5
Sauger	3	0.8	7.5 - 8.3	0.46	0.6
Common carp	2	0.5	18.6 - 23.5	9.13	10.9
Smallmouth bass	2	0.5	7.2 - 7.5	0.42	0.5
Logperch	1	0.3	3.4	0.00	0.0
River carpsucker	1	0.3	4.6	0.04	0.0
Total - 19 Species	372	100.0		83.58	100.0

APPENDIX E

STREAM HABITAT EVALUATION FORMS FOR EACH SITE, J.T. MYERS POOL, OHIO RIVER, 2005.

INDIANA DIVISION OF FISH AND WILDLIFE

STREAM HABITAT EVALUATION FORM

STREAM: Ohio River Myers Pool RIVER MILE: IN RM 776.50 Night

NEAREST TOWN: Newburgh, IN COUNTY: Warrick

QUADRANGLE: Newburgh TWP: 7S RNG: 9W SEC: 2

LATITUDE: LONGITUDE:

LATITUDE: LONGITUDE:

U.S.G.S. GUAGING STATION LOCATION: NA AVG. DISCHARGE (cfs):

IS REACH REPRESENTATIVE OF STREAM (Y/N) No IF NOT, WHY? Upper most pool site.

DESCRIPTION OF SAMPLE SITE (Access, length, direction sampled): Site commenced at downstream end of Newburgh Dam outer lock wall and extended approximately one mile downstream along the Indiana shore. Boat access was from the Angel Mounds ramp located at IN RM 781.50.

COLLECTION SUMMARY

DATE: 9/6/2005 GEAR: DC boat electrofishing EFFORT: 1 hour night

CREW: Stefanavage, Hansen, Dattilo

OTHER GEAR/EFFORT: WATER STAGE: 13.3 -2.7 ft.

CANOPY (%OPEN): 100% PHOTOS (Y/N): N SECCHI DISK (inches): 37

AIR TEMP (F): WATER TEMP (F): 84 D.O. (ppm): 10

CONDUCTIVITY: pH: 7.5 ALKALINITY:

TDS:

STREAM MEASUREMENTS AVG. WIDTH: app 1/2 mile AVG. DEPTH: MAX DEPTH:

STATION LENGTH: (1st date) approximately 1 mile (2nd date)

WIDTH (ft)		DEPTH (in)	

7	7
SUBJECTIVE RATING (1-10)	AESTHETIC RATING (1-10)

ADDITIONAL COMMENTS/POLLUTION IMPACTS:

INDIANA DIVISION OF FISH AND WILDLIFE

STREAM HABITAT EVALUATION FORM

STREAM: Ohio River Myers Pool RIVER MILE: IN 783.75 Night

NEAREST TOWN: Evansville COUNTY: Vanderburgh

QUADRANGLE: Newburgh, Evansville South TWP: 7S RNG: 10W SEC: 14

LATITUDE: 37° 54' 16" N LONGITUDE: 87° 30' 34" W

LATITUDE: LONGITUDE:

U.S.G.S. GUAGING STATION LOCATION: NA AVG. DISCHARGE (cfs):

IS REACH REPRESENTATIVE OF STREAM (Y/N) Yes IF NOT, WHY?

DESCRIPTION OF SAMPLE SITE (Access, length, direction sampled): Site commenced at IN RM 783.5 (approximately 1/4 mile upstream of the Green River's confluence with the Ohio) and extended approximately one mile downstream along the Indiana shore. Boat access was from the Angel Mounds ramp located at IN RM 781.50.

COLLECTION SUMMARY

DATE: 9/6/2005 GEAR: DC boat electrofishing EFFORT: 1 hour night

CREW: Stefanavage, Hansen, Dattilo

OTHER GEAR/EFFORT: WATER STAGE: 13.3-2.7 ft.

CANOPY (%OPEN): 100 PHOTOS (Y/N): N SECCHI DISK (inches): 37

AIR TEMP (F): WATER TEMP (F): 84 D.O. (ppm): 10

CONDUCTIVITY: pH: 7.5 ALKALINITY:

TDS:

STREAM MEASUREMENTS AVG. WIDTH: approx 1/2 mile AVG. DEPTH: MAX DEPTH:

STATION LENGTH: (1st date) approximately 1 mile (2nd date)

WIDTH (ft)		DEPTH (in)	

5	5
SUBJECTIVE RATING (1-10)	AESTHETIC RATING (1-10)

ADDITIONAL COMMENTS/POLLUTION IMPACTS: Site was an inside bend.

INDIANA DIVISION OF FISH AND WILDLIFE

STREAM HABITAT EVALUATION FORM

STREAM: Ohio River Myers Pool RIVER MILE: IN 796.70 Night

NEAREST TOWN: Evansville COUNTY: Vanderburgh

QUADRANGLE: West Frankland TWP: 7S RNG: 11W SEC: 10

LATITUDE: LONGITUDE:

LATITUDE: LONGITUDE:

U.S.G.S. GUAGING STATION LOCATION: NA AVG. DISCHARGE (cfs):

IS REACH REPRESENTATIVE OF STREAM (Y/N) Yes IF NOT, WHY?

DESCRIPTION OF SAMPLE SITE (Access, length, direction sampled): Site commenced at upstream end of Dutch Island (IN RM 796.70), extended downstream approximately one mile along the main channel length of Dutch Island and Indiana shore. Boat access was from the Dogtown Ramp located at IN RM 797.50.

COLLECTION SUMMARY

DATE: 9/7/2005 GEAR: DC boat electrofishing EFFORT: 1 hour night

CREW: Stefanavage, Hansen, Dattilo

OTHER GEAR/EFFORT: WATER STAGE: 14.0+0.7 ft.

CANOPY (%OPEN): 100 PHOTOS (Y/N): N SECCHI DISK (inches): 28

AIR TEMP (F): 85 WATER TEMP (F): 77 D.O. (ppm): 8

CONDUCTIVITY: pH: 7.5 ALKALINITY:

TDS:

STREAM MEASUREMENTS AVG. WIDTH: approx 1/2 mile AVG. DEPTH: MAX DEPTH:

STATION LENGTH: (1st date) approximately 1 mile (2nd date)

WIDTH (ft)		DEPTH (in)	

7	7
SUBJECTIVE RATING (1-10)	AESTHETIC RATING (1-10)

ADDITIONAL COMMENTS/POLLUTION IMPACTS: Site was an outside bend.

INDIANA DIVISION OF FISH AND WILDLIFE

STREAM HABITAT EVALUATION FORM

STREAM: Ohio River Myers Pool RIVER MILE: IN 803.75 Night

NEAREST TOWN: Henderson, KY COUNTY: Vanderburgh

QUADRANGLE: Henderson, KY-IN TWP: 8S RNG: 11W SEC: 12,11

LATITUDE: LONGITUDE:

LATITUDE: LONGITUDE:

U.S.G.S. GUAGING STATION LOCATION: NA AVG. DISCHARGE (cfs):

IS REACH REPRESENTATIVE OF STREAM (Y/N) Yes IF NOT, WHY?

DESCRIPTION OF SAMPLE SITE (Access, length, direction sampled): Site commenced at the Henderson railroad bridge and extended downstream approximately one mile along the Indiana shore. Boat access was from the Dogtown Ramp located at IN RM 797.50.

COLLECTION SUMMARY

DATE: 9/7/2005 GEAR: DC boat electrofishing EFFORT: 1 hour night

CREW: Stefanavage, Hansen, Dattilo

OTHER GEAR/EFFORT: WATER STAGE: 14.0+0.7 ft.

CANOPY (%OPEN): 100 PHOTOS (Y/N): N SECCHI DISK (inches): 28

AIR TEMP (F): 85 WATER TEMP (F): 77 D.O. (ppm): 8

CONDUCTIVITY: pH: 7.5 ALKALINITY:

TDS:

STREAM MEASUREMENTS AVG. WIDTH: approx 1/2 mile AVG. DEPTH: MAX DEPTH:

STATION LENGTH: (1st date) approximately 1 mile (2nd date)

WIDTH (ft)		DEPTH (in)	

7	7
SUBJECTIVE RATING (1-10)	AESTHETIC RATING (1-10)

ADDITIONAL COMMENTS/POLLUTION IMPACTS: Site was an inside bend.

INDIANA DIVISION OF FISH AND WILDLIFE

STREAM HABITAT EVALUATION FORM

STREAM: Ohio River Myers Pool RIVER MILE: IN 821.80 Night

NEAREST TOWN: Mt. Vernon COUNTY: Posey

QUADRANGLE: Caborn, IN-KY TWP: 7S RNG: 12W SEC: 29,30

LATITUDE: 16 429816 E LONGITUDE: 41 91745 N

LATITUDE: LONGITUDE:

U.S.G.S. GUAGING STATION LOCATION: NA AVG. DISCHARGE (cfs):

IS REACH REPRESENTATIVE OF STREAM (Y/N) Yes IF NOT, WHY?

DESCRIPTION OF SAMPLE SITE (Access, length, direction sampled): Station commenced across from USACOE red navigation light on KY shore and extended downstream approximately one mile along Indiana shore. Boat access was from the Mt. Vernon ramp located at IN RM 829.25.

COLLECTION SUMMARY

DATE: 9/13/2005 GEAR: DC boat electrofishing EFFORT: 1 hour night

CREW: Stefanavage, Hansen, Dattilo

OTHER GEAR/EFFORT: WATER STAGE: 13.0-0.4 ft.

CANOPY (%OPEN): 100 PHOTOS (Y/N): N SECCHI DISK (inches): 34

AIR TEMP (F): 76 WATER TEMP (F): 80 D.O. (ppm): 11

CONDUCTIVITY: pH: 8 ALKALINITY:

TDS:

STREAM MEASUREMENTS AVG. WIDTH: approx 1/2 mile AVG. DEPTH: MAX DEPTH:

STATION LENGTH: (1st date) approximately 1 mile (2nd date)

WIDTH (ft)		DEPTH (in)	

7	7
SUBJECTIVE RATING (1-10)	AESTHETIC RATING (1-10)

ADDITIONAL COMMENTS/POLLUTION IMPACTS: Site was an inside bend.

INDIANA DIVISION OF FISH AND WILDLIFE

STREAM HABITAT EVALUATION FORM

STREAM: Ohio River Myers Pool RIVER MILE: KY 821.80 Night

NEAREST TOWN: Mt. Vernon COUNTY: Posey

QUADRANGLE: Smith Mills TWP: 7S RNG: 12W SEC:

LATITUDE: 41 91099 N LONGITUDE: 16 429878 E

LATITUDE: LONGITUDE:

U.S.G.S. GUAGING STATION LOCATION: NA AVG. DISCHARGE (cfs):

IS REACH REPRESENTATIVE OF STREAM (Y/N) Yes IF NOT, WHY?

DESCRIPTION OF SAMPLE SITE (Access, length, direction sampled): Site commenced at USACOE red navigation light on KY shore at KY RM 821.80 and extended downstream approximately one mile along the Kentucky shore. Boat access was from the Mt. Vernon ramp located at IN RM 829.25.

COLLECTION SUMMARY

DATE: 9/13/2005 GEAR: DC boat electrofishing EFFORT: 1 hour night

CREW: Stefanavage, Hansen, Dattilo

OTHER GEAR/EFFORT: WATER STAGE:

CANOPY (%OPEN): 100 PHOTOS (Y/N): N SECCHI DISK (inches): 34

AIR TEMP (F): 76 WATER TEMP (F): 80 D.O. (ppm): 11

CONDUCTIVITY: pH: 8 ALKALINITY:

TDS:

STREAM MEASUREMENTS AVG. WIDTH: approx 1/2 mile AVG. DEPTH: MAX DEPTH:

STATION LENGTH: (1st date) approximately 1 mile (2nd date)

WIDTH (ft)		DEPTH (in)	

8	8
SUBJECTIVE RATING (1-10)	AESTHETIC RATING (1-10)

ADDITIONAL COMMENTS/POLLUTION IMPACTS: Site was a deep outside bend with abundant rip-rap along the shoreline.

INDIANA DIVISION OF FISH AND WILDLIFE

STREAM HABITAT EVALUATION FORM

STREAM: Ohio River Myers Pool RIVER MILE: IN 839.50 Night

NEAREST TOWN: Mt. Vernon COUNTY: Posey

QUADRANGLE: Uniontown, KY-IN TWP: 8S RNG: 13W, 14W SEC: 19

LATITUDE: 16 419479 E LONGITUDE: 4184206 N

LATITUDE: LONGITUDE:

U.S.G.S. GUAGING STATION LOCATION: NA AVG. DISCHARGE (cfs):

IS REACH REPRESENTATIVE OF STREAM (Y/N) Yes IF NOT, WHY?

DESCRIPTION OF SAMPLE SITE (Access, length, direction sampled): Site commenced across from USACOE red navigation at RM KY 839.5 and extended downstream approximately one mile along the Indiana shore. Boat access was from Hovey Lake FWA's Ohio River ramp at RM IN 842.00.

COLLECTION SUMMARY

DATE: 9/14/2005 GEAR: DC boat electrofishing EFFORT: 1 hour night

CREW: Stefanavage, Hansen, Dattilo

OTHER GEAR/EFFORT: WATER STAGE:

CANOPY (%OPEN): 100 PHOTOS (Y/N): N SECCHI DISK (inches): 34

AIR TEMP (F): 82 WATER TEMP (F): 82 D.O. (ppm): 10

CONDUCTIVITY: pH: 8 ALKALINITY:

TDS:

STREAM MEASUREMENTS AVG. WIDTH: approx 1/2 mile AVG. DEPTH: MAX DEPTH:

STATION LENGTH: (1st date) approximately 1 mile (2nd date)

WIDTH (ft)		DEPTH (in)	

7	7
SUBJECTIVE RATING (1-10)	AESTHETIC RATING (1-10)

ADDITIONAL COMMENTS/POLLUTION IMPACTS: Inside bend. Sand / silt / mud bottom. Abundant submerged timber, submerged timber line.

INDIANA DIVISION OF FISH AND WILDLIFE

STREAM HABITAT EVALUATION FORM

STREAM: Ohio River Myers Pool RIVER MILE: KY 839.50 Night

NEAREST TOWN: Mt. Vernon COUNTY: Posey

QUADRANGLE: Uniontown, KY-IN TWP: 8S RNG: 13W, 14W SEC:

LATITUDE: 4183819 N LONGITUDE: 16 420100 E

LATITUDE: LONGITUDE:

U.S.G.S. GUAGING STATION LOCATION: NA AVG. DISCHARGE (cfs):

IS REACH REPRESENTATIVE OF STREAM (Y/N) Yes IF NOT, WHY?

DESCRIPTION OF SAMPLE SITE (Access, length, direction sampled): Site commenced at USACOE red navigation light at RM KY 839.50 and extended downstream approximately one mile along the Kentucky shore. Boat access was from Hovey Lake FWA's Ohio River ramp at RM IN 482.00.

COLLECTION SUMMARY

DATE: 9/14/2005 GEAR: DC boat electrofishing EFFORT: 1 hour night

CREW: Stefanavage, Hansen, Dattilo

OTHER GEAR/EFFORT: WATER STAGE:

CANOPY (%OPEN): 100 PHOTOS (Y/N): N SECCHI DISK (inches): 34.25

AIR TEMP (F): 82 WATER TEMP (F): 82 D.O. (ppm): 10

CONDUCTIVITY: pH: 8 ALKALINITY:

TDS:

STREAM MEASUREMENTS AVG. WIDTH: approx 1/2 mile AVG. DEPTH: MAX DEPTH:

STATION LENGTH: (1st date) approximately 1 mile (2nd date)

WIDTH (ft)		DEPTH (in)	

8	8
SUBJECTIVE RATING (1-10)	AESTHETIC RATING (1-10)

ADDITIONAL COMMENTS/POLLUTION IMPACTS: Outside bend. Deep water and rip-rap along shore.

APPENDIX F

QHEI FORMS FOR EACH SITE, J.T. MYERS POOL, OHIO RIVER, 2005.

STREAM: Ohio River Myers Pool RIVER MILE IN RM 776.5 Night DATE: 9/6/2005 QHEI SCORE 30.5

1) SUBSTRATE: (Check ONLY Two Substrate Type Boxes: Check all types present)(20) SUBSTRATE SCORE 3

TYPE		POOL	RIFFLE			POOL	RIFFLE
	BLDER/SLAB(10)				GRAVEL(7)		
	BOULDER(9)			X	SAND(6)	X	
	COBBLE(8)				BEDROCK(5)		
	HARDPAN(4)				DETRITUS(3)		
X	MUCK/SILT(2)	X		X	ARTIFIC(0)		

TOTAL NUMBER OF SUBSTRATE TYPES: >4(2) X <4(0)

SUBSTRATE ORIGIN (all): LIMESTONE(1); TILLS(1); SANDSTONE(0); SHALE(-1); COAL FINES(-2); X RIP/RAP(0); HARDPAN(0)

SILT COVER (one): SILT-HEAVY(-2); X SILT-NORM(0); SILT-MOD(-1); SILT-FREE(1)

Extent of Embeddedness (check one): EXTENSIVE(-2); LOW(0); X MODERATE(-1); NONE(1)

NOTE: (Ignore sludge that originates from point sources: score is based on natural substrates)

COMMENTS:

2) INSTREAM COVER: (20) COVER SCORE 7

TYPE(Check all that apply): UNDERCUT BANKS(1); OVERHANGING VEGETATION(1); X SHALLOWS (IN SLOW WATER)(1); X DEEP POOLS(2); ROOTWADS(1); BOULDERS(1); OXBOWS(1); AQUATIC MACROPHYTES(1); X LOGS OR WOODY DEBRIS(1)

AMOUNT (Check only one or Check 2 and AVERAGE): EXTENSIVE >75%(11); MODERATE 25-75%(7); X SPARSE 5-25%(3); NEARLY ABSENT <5%(1)

COMMENTS:

3) CHANNEL MORPHOLOGY: (Check ONLY ONE per Category or Check 2 and AVERAGE)(20) 10

SINUOSITY: HIGH(4); MODERATE(3); LOW(2); X NONE(1)

DEVELOPMENT: EXCELLENT(7); GOOD(5); FAIR(3); X POOR(1)

CHANNELIZATION: X NONE(6); RECOVERED(4); RECOVERING(3); RECENT OR NO RECOVERY(1)

STABILITY: HIGH(3); 2 MODERATE(2); LOW(1)

MODIFICATION/OTHER: SNAGGING; RELOCATION; CANOPY REMOVAL; DREDGING; ONE SIDE CHANNEL MODIFICATION; IMPOUND; ISLAND; LEVEED; BANK SHAPING

COMMENTS:

4) RIPARIAN ZONE AND BANK EROSION: (Check ONE box or Check 2 and AVERAGE per bank) (10) RIPARIAN SCORE 4.5

River Right Looking Downstream

RIPARIAN WIDTH (per bank)

L	R	(per bank)
		WIDE>150ft.(4)
		MODERATE 30-150 ft.(3)
X	X	NARROW 15-30 ft.(2)
		VERY NARROW 3-15 ft.(1)
		NONE(0)

EROSION/RUNOFF-FLOODPLAIN QUALITY

L	R	(most predominant per bank)	L	R	(per bank)
		FOREST, SWAMP(3)			URBAN OR INDUSTRIAL(0)
X		OPEN PASTURE/ROW CROP(0)			SHURB OR OLD FIELD(2)
	X	RESID.,PARK,NEW FIELD(1)			CONSERV. TILLAGE(1)
		FENCED PASTURE(1)			MINING/CONSTRUCTION(0)

BANK EROSION

L	R	(per bank)
		NONE OR LITTLE(3)
X	X	MODERATE(2)
		HEAVY OR SEVERE(1)

COMMENTS:

5) POOL/GLIDE AND RIFFLE/RUN QUALITY (12) **NO POOL = 0** POOL SCORE 0

MAX. DEPTH (Check 1): >4 ft.(6); 2.4-4 ft.(4); 1.2-2.4 ft.(2); <1.2 ft.(1); <0.6 ft.(Pool=0)(0)

MORPHOLOGY (Check 1): POOL WIDTH>RIFFLE WIDTH(2); POOL WIDTH=RIFFLE WIDTH(1); POOL WIDTH<RIFFLE WIDTH(0)

POOL/RUN/RIFFLE CURRENT VELOCITY (Check all that Apply): TORRENTIAL(-1); FAST(1); MODERATE(1); SLOW(1); EDDIES(1); INTERSTITIAL(-1); INTERMITTENT(-2)

COMMENTS:

RIFFLE SCORE 0

RIFFLE/RUN DEPTH: GENERALLY >4 in. MAX.>20 in.(4); GENERALLY >4 in. MAX.<20 in.(3); GENERALLY 2-4 in.(1); GENERALLY <2 in.(Riffle=0)(0)

RIFFLE/RUN SUBSTRATE: STABLE (e.g., Cobble,Boulder)(2); MOD. STABLE (e.g., Pea Gravel)(1); UNSTABLE (Gravel, Sand)(0); NO RIFFLE(0)

RIFFLE/RUN EMBEDDEDNESS: EXTENSIVE(-1); MODERATE(0); LOW(1); NONE(2); NO RIFFLE(0)

COMMENTS:

6) GRADIENT (FEET/MILE)(10): 0.28 % POOL _____ % RIFFLE _____ %RUN 100 GRADIENT SCORE 6

STREAM: Ohio River Myers Pool RIVER MILE IN RM 783.75 Night DATE: 9/6/2005 QHEI SCORE 26.5

1) SUBSTRATE: (Check ONLY Two Substrate Type Boxes: Check all types present)(20) SUBSTRATE SCORE 2

TYPE		POOL	RIFFLE			POOL	RIFFLE
	BLDER/SLAB(10)				GRAVEL(7)		
	BOULDER(9)				SAND(6)	X	
	COBBLE(8)				BEDROCK(5)		
	HARDPAN(4)				DETRITUS(3)	X	
X	MUCK/SILT(2)	X			ARTIFIC(0)		

TOTAL NUMBER OF SUBSTRATE TYPES: >4(2) X <4(0)

SUBSTRATE ORIGIN (all): LIMESTONE(1), TILLS(1), SANDSTONE(0), SHALE(-1), COAL FINES(-2), RIP/RAP(0), HARDPAN(0)

SILT COVER (one): SILT-HEAVY(-2), X SILT-NORM(0), SILT-MOD(-1), SILT-FREE(1)

Extent of Embeddedness (check one): X EXTENSIVE(-2), MODERATE(-1), LOW(0), NONE(1)

NOTE: (Ignore sludge that originates from point sources: score is based on natural substrates)

COMMENTS:

2) INSTREAM COVER: (20) COVER SCORE 5

TYPE(Check all that apply)

- UNDERCUT BANKS(1)
- OVERHANGING VEGETATION(1)
- X SHALLOWS (IN SLOW WATER)(1)
- X DEEP POOLS(2)
- ROOTWADS(1)
- BOULDERS(1)
- OXBOWS(1)
- AQUATIC MACROPHYTES(1)
- X LOGS OR WOODY DEBRIS(1)

AMOUNT(Check only one or Check 2 and AVERAGE)

- EXTENSIVE >75%(11)
- MODERATE 25-75%(7)
- SPARSE 5-25%(3)
- X NEARLY ABSENT <5%(1)

COMMENTS:

3) CHANNEL MORPHOLOGY: (Check ONLY ONE per Category or Check 2 and AVERAGE)(20) 10

SINUOSITY: HIGH(4), MODERATE(3), LOW(2), X NONE(1)

DEVELOPMENT: EXCELLENT(7), GOOD(5), FAIR(3), X POOR(1)

CHANNELIZATION: X NONE(6), RECOVERED(4), RECOVERING(3), RECENT OR NO RECOVERY(1)

STABILITY: HIGH(3), X MODERATE(2), LOW(1)

MODIFICATION/OTHER: SNAGGING, RELOCATION, CANOPY REMOVAL, DREDGING, ONE SIDE CHANNEL MODIFICATION, IMPOUND, ISLAND, LEVEED, BANK SHAPING

COMMENTS:

4) RIPARIAN ZONE AND BANK EROSION: (Check ONE box or Check 2 and AVERAGE per bank) (10) RIPARIAN SCORE 3.5

River Right Looking Downstream

RIPARIAN WIDTH (per bank)

L	R	(per bank)
		WIDE>150ft.(4)
		MODERATE 30-150 ft.(3)
X		NARROW 15-30 ft.(2)
	X	VERY NARROW 3-15 ft.(1)
		NONE(0)

EROSION/RUNOFF-FLOODPLAIN QUALITY

L	R	(most predominant per bank)
		FOREST, SWAMP(3)
X	X	OPEN PASTURE/ROW CROP(0)
		RESID.,PARK,NEW FIELD(1)
		FENCED PASTURE(1)

L	R	(per bank)
		URBAN OR INDUSTRIAL(0)
		SHURB OR OLD FIELD(2)
		CONSERV. TILLAGE(1)
		MINING/CONSTRUCTION(0)

BANK EROSION

L	R	(per bank)
		NONE OR LITTLE(3)
X	X	MODERATE(2)
		HEAVY OR SEVERE(1)

COMMENTS:

5) POOL/GLIDE AND RIFFLE/RUN QUALITY (12) **NO POOL = 0** POOL SCORE 0

MAX. DEPTH (Check 1)

- >4 ft.(6)
- 2.4-4 ft.(4)
- 1.2-2.4 ft.(2)
- <1.2 ft.(1)
- <0.6 ft.(Pool=0)(0)

MORPHOLOGY (Check 1)

- POOL WIDTH>RIFFLE WIDTH(2)
- POOL WIDTH=RIFFLE WIDTH(1)
- POOL WIDTH<RIFFLE WIDTH(0)

POOL/RUN/RIFFLE CURRENT VELOCITY (Check all that Apply)

- TORRENTIAL(-1)
- FAST(1)
- MODERATE(1)
- SLOW(1)
- EDDIES(1)
- INTERSTITIAL(-1)
- INTERMITTENT(-2)

COMMENTS:

RIFFLE SCORE 0

RIFFLE/RUN DEPTH

- GENERALLY >4 in. MAX.>20 in.(4)
- GENERALLY >4 in. MAX.<20 in.(3)
- GENERALLY 2-4 in.(1)
- GENERALLY <2 in.(Riffle=0)(0)

RIFFLE/RUN SUBSTRATE

- STABLE (e.g., Cobble,Boulder)(2)
- MOD. STABLE (e.g., Pea Gravel)(1)
- UNSTABLE (Gravel, Sand)(0)
- NO RIFFLE(0)

RIFFLE/RUN EMBEDDEDNESS

- EXTENSIVE(-1)
- MODERATE(0)
- LOW(1)
- NONE(2)
- NO RIFFLE(0)

COMMENTS:

6) GRADIENT (FEET/MILE)(10): 0.28 % POOL _____ % RIFFLE _____ % RUN 100 GRADIENT SCORE 6

STREAM: Ohio River Myers Pool RIVER MILE IN 796.70 Night DATE: 9/7/2005 QHEI SCORE 28.5

1) SUBSTRATE: (Check ONLY Two Substrate Type Boxes: Check all types present)(20) SUBSTRATE SCORE 2

TYPE		POOL	RIFFLE			POOL	RIFFLE
	BLDER/SLAB(10)				GRAVEL(7)		
	BOULDER(9)				SAND(6)	X	
	COBBLE(8)				BEDROCK(5)		
	HARDPAN(4)				DETRITUS(3)	X	
X	MUCK/SILT(2)	X			ARTIFIC(0)	X	

TOTAL NUMBER OF SUBSTRATE TYPES: [ ] >4(2) [X] <4(0)

SUBSTRATE ORIGIN (all): [ ] LIMESTONE(1) [ ] RIP/RAP(0) [ ] HARDPAN(0) [ ] TILLS(1) [ ] SANDSTONE(0) [ ] SHALE(-1) [ ] COAL FINES(-2)

SILT COVER (one): [ ] SILT-HEAVY(-2) [ ] SILT-MOD(-1) [X] SILT-NORM(0) [ ] SILT-FREE(1)

Extent of Embeddedness (check one): [X] EXTENSIVE(-2) [ ] MODERATE(-1) [ ] LOW(0) [ ] NONE(1)

NOTE: (Ignore sludge that originates from point sources: score is based on natural substrates)

COMMENTS:

2) INSTREAM COVER: (20) COVER SCORE 6

TYPE(Check all that apply)

[ ] UNDERCUT BANKS(1)
[X] OVERHANGING VEGETATION(1)
[X] SHALLOWS (IN SLOW WATER)(1)
[X] DEEP POOLS(2)
[ ] ROOTWADS(1)
[ ] BOULDERS(1)
[ ] OXBOWS(1)
[ ] AQUATIC MACROPHYTES(1)
[X] LOGS OR WOODY DEBRIS(1)

AMOUNT (Check only one or Check 2 and AVERAGE)

[ ] EXTENSIVE >75%(11)
[ ] MODERATE 25-75%(7)
[ ] SPARSE 5-25%(3)
[X] NEARLY ABSENT <5%(1)

COMMENTS:

3) CHANNEL MORPHOLOGY: (Check ONLY ONE per Category or Check 2 and AVERAGE)(20) 10

SINUOSITY: [ ] HIGH(4) [ ] MODERATE(3) [ ] LOW(2) [X] NONE(1)

DEVELOPMENT: [ ] EXCELLENT(7) [ ] GOOD(5) [ ] FAIR(3) [X] POOR(1)

CHANNELIZATION: [X] NONE(6) [ ] RECOVERED(4) [ ] RECOVERING(3) [ ] RECENT OR NO RECOVERY(1)

STABILITY: [ ] HIGH(3) [X] MODERATE(2) [ ] LOW(1)

MODIFICATION/OTHER: [ ] SNAGGING [ ] RELOCATION [ ] CANOPY REMOVAL [ ] DREDGING [ ] ONE SIDE CHANNEL MODIFICATION [ ] IMPOUND [ ] ISLAND [ ] LEVEED [ ] BANK SHAPING

COMMENTS:

4) RIPARIAN ZONE AND BANK EROSION: (Check ONE box or Check 2 and AVERAGE per bank) (10) RIPARIAN SCORE 4.5

River Right Looking Downstream

RIPARIAN WIDTH (per bank) L	R	(per bank)	EROSION/RUNOFF-FLOODPLAIN QUALITY L	R	(most predominant per bank)	L	R	(per bank)	BANK EROSION L	R	(per bank)
		WIDE>150ft.(4)			FOREST, SWAMP(3)			URBAN OR INDUSTRIAL(0)			NONE OR LITTLE(3)
	X	MODERATE 30-150 ft.(3)	X	X	OPEN PASTURE/ROW CROP(0)			SHURB OR OLD FIELD(2)	X	X	MODERATE(2)
X		NARROW 15-30 ft.(2)			RESID.,PARK,NEW FIELD(1)			CONSERV. TILLAGE(1)			HEAVY OR SEVERE(1)
		VERY NARROW 3-15 ft.(1)			FENCED PASTURE(1)			MINING/CONSTRUCTION(0)			
		NONE(0)									

COMMENTS:

5) POOL/GLIDE AND RIFFLE/RUN QUALITY (12) **NO POOL = 0** POOL SCORE 0

MAX. DEPTH (Check 1): [ ] >4 ft.(6) [ ] 2.4-4 ft.(4) [ ] 1.2-2.4 ft.(2) [ ] <1.2 ft.(1) [ ] <0.6 ft.(Pool=0)(0)

MORPHOLOGY (Check 1): [ ] POOL WIDTH>RIFFLE WIDTH(2) [ ] POOL WIDTH=RIFFLE WIDTH(1) [ ] POOL WIDTH<RIFFLE WIDTH(0)

POOL/RUN/RIFFLE CURRENT VELOCITY (Check all that Apply): [ ] TORRENTIAL(-1) [ ] FAST(1) [ ] MODERATE(1) [ ] SLOW(1) [ ] EDDIES(1) [ ] INTERSTITIAL(-1) [ ] INTERMITTENT(-2)

COMMENTS:

RIFFLE SCORE 0

RIFFLE/RUN DEPTH: [ ] GENERALLY >4 in. MAX.>20 in.(4) [ ] GENERALLY >4 in. MAX.<20 in.(3) [ ] GENERALLY 2-4 in.(1) [ ] GENERALLY <2 in.(Riffle=0)(0)

RIFFLE/RUN SUBSTRATE: [ ] STABLE (e.g., Cobble,Boulder)(2) [ ] MOD. STABLE (e.g., Pea Gravel)(1) [ ] UNSTABLE (Gravel, Sand)(0) [ ] NO RIFFLE(0)

RIFFLE/RUN EMBEDDEDNESS: [ ] EXTENSIVE(-1) [ ] MODERATE(0) [ ] LOW(1) [ ] NONE(2) [ ] NO RIFFLE(0)

COMMENTS:

6) GRADIENT (FEET/MILE)(10) 0.28 % POOL % RIFFLE % RUN 100 GRADIENT SCORE 6

STREAM: Ohio River Myers Pool RIVER MILE IN RM 803.75 Night DATE: 9/7/2005 QHEI SCORE 27

1) SUBSTRATE: (Check ONLY Two Substrate Type Boxes: Check all types present)(20) SUBSTRATE SCORE 2

TYPE		POOL	RIFFLE			POOL	RIFFLE
	BLDER/SLAB(10)				GRAVEL(7)		
	BOULDER(9)				SAND(6)	X	
	COBBLE(8)				BEDROCK(5)		
	HARDPAN(4)				DETRITUS(3)	X	
X	MUCK/SILT(2)	X			ARTIFIC(0)		

TOTAL NUMBER OF SUBSTRATE TYPES: >4(2) X <4(0)

SUBSTRATE ORIGIN (all): LIMESTONE(1); TILLS(1); SANDSTONE(0); SHALE(-1); COAL FINES(-2); RIP/RAP(0); HARDPAN(0)

SILT COVER (one): SILT-HEAVY(-2); X SILT-NORM(0); SILT-MOD(-1); SILT-FREE(1)

Extent of Embeddedness (check one): X EXTENSIVE(-2); LOW(0); MODERATE(-1); NONE(1)

NOTE: (Ignore sludge that originates from point sources: score is based on natural substrates)

COMMENTS:

2) INSTREAM COVER: (20) COVER SCORE 5

TYPE(Check all that apply)

- UNDERCUT BANKS(1)
- OVERHANGING VEGETATION(1)
- X SHALLOWS (IN SLOW WATER)(1)
- X DEEP POOLS(2)
- ROOTWADS(1)
- BOULDERS(1)
- OXBOWS(1)
- AQUATIC MACROPHYTES(1)
- X LOGS OR WOODY DEBRIS(1)

AMOUNT (Check only one or Check 2 and AVERAGE)

- EXTENSIVE >75%(11)
- MODERATE 25-75%(7)
- SPARSE 5-25%(3)
- X NEARLY ABSENT <5%(1)

COMMENTS:

3) CHANNEL MORPHOLOGY: (Check ONLY ONE per Category or Check 2 and AVERAGE)(20) 10

SINUOSITY: HIGH(4); MODERATE(3); LOW(2); X NONE(1)

DEVELOPMENT: EXCELLENT(7); GOOD(5); FAIR(3); X POOR(1)

CHANNELIZATION: X NONE(6); RECOVERED(4); RECOVERING(3); RECENT OR NO RECOVERY(1)

STABILITY: HIGH(3); X MODERATE(2); LOW(1)

MODIFICATION/OTHER: SNAGGING; RELOCATION; CANOPY REMOVAL; DREDGING; ONE SIDE CHANNEL MODIFICATION; IMPOUND; ISLAND; LEVEED; BANK SHAPING

COMMENTS:

4) RIPARIAN ZONE AND BANK EROSION: (Check ONE box or Check 2 and AVERAGE per bank) (10) RIPARIAN SCORE 4

River Right Looking Downstream

RIPARIAN WIDTH (per bank)

L	R	(per bank)
		WIDE>150ft.(4)
		MODERATE 30-150 ft.(3)
X	X	NARROW 15-30 ft.(2)
		VERY NARROW 3-15 ft.(1)
		NONE(0)

EROSION/RUNOFF-FLOODPLAIN QUALITY

L	R	(most predominant per bank)	L	R	(per bank)
		FOREST, SWAMP(3)	X		URBAN OR INDUSTRIAL(0)
	X	OPEN PASTURE/ROW CROP(0)			SHURB OR OLD FIELD(2)
		RESID.,PARK,NEW FIELD(1)			CONSERV. TILLAGE(1)
		FENCED PASTURE(1)			MINING/CONSTRUCTION(0)

BANK EROSION

L	R	(per bank)
		NONE OR LITTLE(3)
X	X	MODERATE(2)
		HEAVY OR SEVERE(1)

COMMENTS:

5) POOL/GLIDE AND RIFFLE/RUN QUALITY (12) **NO POOL = 0** POOL SCORE 0

MAX. DEPTH (Check 1)

- >4 ft.(6)
- 2.4-4 ft.(4)
- 1.2-2.4 ft.(2)
- <1.2 ft.(1)
- <0.6 ft.(Pool=0)(0)

MORPHOLOGY (Check 1)

- POOL WIDTH>RIFFLE WIDTH(2)
- POOL WIDTH=RIFFLE WIDTH(1)
- POOL WIDTH<RIFFLE WIDTH(0)

POOL/RUN/RIFFLE CURRENT VELOCITY (Check all that Apply)

- TORRENTIAL(-1)
- FAST(1)
- MODERATE(1)
- SLOW(1)
- EDDIES(1)
- INTERSTITIAL(-1)
- INTERMITTENT(-2)

COMMENTS:

RIFFLE SCORE 0

RIFFLE/RUN DEPTH

- GENERALLY >4 in. MAX.>20 in.(4)
- GENERALLY >4 in. MAX.<20 in.(3)
- GENERALLY 2-4 in.(1)
- GENERALLY <2 in.(Riffle=0)(0)

RIFFLE/RUN SUBSTRATE

- STABLE (e.g., Cobble,Boulder)(2)
- MOD. STABLE (e.g., Pea Gravel)(1)
- UNSTABLE (Gravel, Sand)(0)
- NO RIFFLE(0)

RIFFLE/RUN EMBEDDEDNESS

- EXTENSIVE(-1)
- MODERATE(0)
- LOW(1)
- NONE(2)
- NO RIFFLE(0)

COMMENTS:

6) GRADIENT (FEET/MILE)(10) 0.28 % POOL _____ % RIFFLE _____ %RUN 100 GRADIENT SCORE 6

STREAM: Ohio River Myers Pool RIVER MILE IN RM 821.80 Night DATE: 9/13/2005 QHEI SCORE 27

1) SUBSTRATE: (Check ONLY Two Substrate Type Boxes: Check all types present)(20) SUBSTRATE SCORE 2

TYPE		POOL	RIFFLE			POOL	RIFFLE
	BLDER/SLAB(10)				GRAVEL(7)		
	BOULDER(9)				SAND(6)	X	
	COBBLE(8)				BEDROCK(5)		
	HARDPAN(4)				DETRITUS(3)	X	
X	MUCK/SILT(2)	X			ARTIFIC(0)		

TOTAL NUMBER OF SUBSTRATE TYPES: >4(2) X <4(0)

NOTE: (Ignore sludge that originates from point sources: score is based on natural substrates)

SUBSTRATE ORIGIN (all): LIMESTONE(1), TILLS(1), SANDSTONE(0), SHALE(-1), COAL FINES(-2), RIP/RAP(0), HARDPAN(0)

SILT COVER (one): SILT-HEAVY(-2), X SILT-NORM(0), SILT-MOD(-1), SILT-FREE(1)

Extent of Embeddedness (check one): X EXTENSIVE(-2), LOW(0), MODERATE(-1), NONE(1)

COMMENTS:

2) INSTREAM COVER: (20) COVER SCORE 5

TYPE(Check all that apply): UNDERCUT BANKS(1), OVERHANGING VEGETATION(1), X SHALLOWS (IN SLOW WATER)(1), X DEEP POOLS(2), ROOTWADS(1), BOULDERS(1), OXBOWS(1), AQUATIC MACROPHYTES(1), X LOGS OR WOODY DEBRIS(1)

AMOUNT(Check only one or Check 2 and AVERAGE): EXTENSIVE >75%(11), MODERATE 25-75%(7), SPARSE 5-25%(3), X NEARLY ABSENT <5%(1)

COMMENTS:

3) CHANNEL MORPHOLOGY: (Check ONLY ONE per Category or Check 2 and AVERAGE)(20) 10

SINUOSITY: HIGH(4), MODERATE(3), LOW(2), X NONE(1)

DEVELOPMENT: EXCELLENT(7), GOOD(5), FAIR(3), X POOR(1)

CHANNELIZATION: X NONE(6), RECOVERED(4), RECOVERING(3), RECENT OR NO RECOVERY(1)

STABILITY: HIGH(3), X MODERATE(2), LOW(1)

MODIFICATION/OTHER: SNAGGING, RELOCATION, CANOPY REMOVAL, DREDGING, ONE SIDE CHANNEL MODIFICATION, IMPOUND, ISLAND, LEVEED, BANK SHAPING

COMMENTS:

4) RIPARIAN ZONE AND BANK EROSION: (Check ONE box or Check 2 and AVERAGE per bank) (10) RIPARIAN SCORE 4

River Right Looking Downstream

RIPARIAN WIDTH (per bank)

L	R	(per bank)
		WIDE>150ft.(4)
		MODERATE 30-150 ft.(3)
X	X	NARROW 15-30 ft.(2)
		VERY NARROW 3-15 ft.(1)
		NONE(0)

EROSION/RUNOFF-FLOODPLAIN QUALITY

L	R	(most predominant per bank)
		FOREST, SWAMP(3)
X	X	OPEN PASTURE/ROW CROP(0)
		RESID.,PARK,NEW FIELD(1)
		FENCED PASTURE(1)

L	R	(per bank)
		URBAN OR INDUSTRIAL(0)
		SHURB OR OLD FIELD(2)
		CONSERV. TILLAGE(1)
		MINING/CONSTRUCTION(0)

BANK EROSION

L	R	(per bank)
		NONE OR LITTLE(3)
X	X	MODERATE(2)
		HEAVY OR SEVERE(1)

COMMENTS:

5) POOL/GLIDE AND RIFFLE/RUN QUALITY (12) **NO POOL = 0** POOL SCORE 0

MAX. DEPTH (Check 1): >4 ft.(6), 2.4-4 ft.(4), 1.2-2.4 ft.(2), <1.2 ft.(1), <0.6 ft.(Pool=0)(0)

MORPHOLOGY (Check 1): POOL WIDTH>RIFFLE WIDTH(2), POOL WIDTH=RIFFLE WIDTH(1), POOL WIDTH<RIFFLE WIDTH(0)

POOL/RUN/RIFFLE CURRENT VELOCITY (Check all that Apply): TORRENTIAL(-1), FAST(1), MODERATE(1), SLOW(1), EDDIES(1), INTERSTITIAL(-1), INTERMITTENT(-2)

COMMENTS:

RIFFLE SCORE 0

RIFFLE/RUN DEPTH: GENERALLY >4 in. MAX.>20 in.(4), GENERALLY >4 in. MAX.<20 in.(3), GENERALLY 2-4 in.(1), GENERALLY <2 in.(Riffle=0)(0)

RIFFLE/RUN SUBSTRATE: STABLE (e.g., Cobble,Boulder)(2), MOD. STABLE (e.g., Pea Gravel)(1), UNSTABLE (Gravel, Sand)(0), NO RIFFLE(0)

RIFFLE/RUN EMBEDDEDNESS: EXTENSIVE(-1), MODERATE(0), LOW(1), NONE(2), NO RIFFLE(0)

COMMENTS:

6) GRADIENT (FEET/MILE)(10): 0.28 % POOL _____ % RIFFLE _____ % RUN 100 GRADIENT SCORE 6

STREAM: Ohio River Myers Pool RIVER MILE RM KY 821.80 Night DATE: 9/13/2005 QHEI SCORE 37

1) SUBSTRATE: (Check ONLY Two Substrate Type Boxes: Check all types present)(20) SUBSTRATE SCORE 9

TYPE		POOL	RIFFLE			POOL	RIFFLE
	BLDER/SLAB(10)				GRAVEL(7)		
X	BOULDER(9)				SAND(6)	X	
	COBBLE(8)				BEDROCK(5)		
	HARDPAN(4)				DETRITUS(3)	X	
X	MUCK/SILT(2)	X			ARTIFIC(0)	X	

TOTAL NUMBER OF SUBSTRATE TYPES: >4(2) X <4(0)

SUBSTRATE ORIGIN (all): LIMESTONE(1); X RIP/RAP(0); HARDPAN(0); TILLS(1); SANDSTONE(0); SHALE(-1); COAL FINES(-2)

SILT COVER (one): SILT-HEAVY(-2); SILT-MOD(-1); X SILT-NORM(0); SILT-FREE(1)

Extent of Embeddedness (check one): X EXTENSIVE(-2); MODERATE(-1); LOW(0); NONE(1)

NOTE: (Ignore sludge that originates from point sources: score is based on natural substrates)

COMMENTS: Boulder habitat checked was actually rip rap.

2) INSTREAM COVER: (20) COVER SCORE 8

TYPE(Check all that apply): UNDERCUT BANKS(1); OVERHANGING VEGETATION(1); X SHALLOWS (IN SLOW WATER)(1); X DEEP POOLS(2); ROOTWADS(1); X BOULDERS(1); OXBOWS(1); AQUATIC MACROPHYTES(1); X LOGS OR WOODY DEBRIS(1)

AMOUNT(Check only one or Check 2 and AVERAGE): EXTENSIVE >75%(11); MODERATE 25-75%(7); X SPARSE 5-25%(3); NEARLY ABSENT <5%(1)

COMMENTS:

3) CHANNEL MORPHOLOGY: (Check ONLY ONE per Category or Check 2 and AVERAGE)(20) 10

SINUOSITY: HIGH(4); MODERATE(3); LOW(2); X NONE(1)

DEVELOPMENT: EXCELLENT(7); GOOD(5); FAIR(3); X POOR(1)

CHANNELIZATION: X NONE(6); RECOVERED(4); RECOVERING(3); RECENT OR NO RECOVERY(1)

STABILITY: HIGH(3); X MODERATE(2); LOW(1)

MODIFICATION/OTHER: SNAGGING; RELOCATION; CANOPY REMOVAL; DREDGING; ONE SIDE CHANNEL MODIFICATION; IMPOUND; ISLAND; LEVEED; BANK SHAPING

COMMENTS:

4) RIPARIAN ZONE AND BANK EROSION: (Check ONE box or Check 2 and AVERAGE per bank) (10) RIPARIAN SCORE 4

River Right Looking Downstream

RIPARIAN WIDTH (per bank)

L	R	(per bank)
		WIDE>150ft.(4)
		MODERATE 30-150 ft.(3)
X	X	NARROW 15-30 ft.(2)
		VERY NARROW 3-15 ft.(1)
		NONE(0)

EROSION/RUNOFF-FLOODPLAIN QUALITY

L	R	(most predominant per bank)	L	R	(per bank)
		FOREST, SWAMP(3)			URBAN OR INDUSTRIAL(0)
X	X	OPEN PASTURE/ROW CROP(0)			SHURB OR OLD FIELD(2)
		RESID.,PARK,NEW FIELD(1)			CONSERV. TILLAGE(1)
		FENCED PASTURE(1)			MINING/CONSTRUCTION(0)

BANK EROSION

L	R	(per bank)
		NONE OR LITTLE(3)
X	X	MODERATE(2)
		HEAVY OR SEVERE(1)

COMMENTS:

5) POOL/GLIDE AND RIFFLE/RUN QUALITY (12) **NO POOL = 0** POOL SCORE 0

MAX. DEPTH (Check 1): >4 ft.(6); 2.4-4 ft.(4); 1.2-2.4 ft.(2); <1.2 ft.(1); <0.6 ft.(Pool=0)(0)

MORPHOLOGY (Check 1): POOL WIDTH>RIFFLE WIDTH(2); POOL WIDTH=RIFFLE WIDTH(1); POOL WIDTH<RIFFLE WIDTH(0)

POOL/RUN/RIFFLE CURRENT VELOCITY (Check all that Apply): TORRENTIAL(-1); FAST(1); MODERATE(1); SLOW(1); EDDIES(1); INTERSTITIAL(-1); INTERMITTENT(-2)

COMMENTS:

RIFFLE SCORE 0

RIFFLE/RUN DEPTH: GENERALLY >4 in. MAX.>20 in.(4); GENERALLY >4 in. MAX.<20 in.(3); GENERALLY 2-4 in.(1); GENERALLY <2 in.(Riffle=0)(0)

RIFFLE/RUN SUBSTRATE: STABLE (e.g., Cobble,Boulder)(2); MOD. STABLE (e.g., Pea Gravel)(1); UNSTABLE (Gravel, Sand)(0); NO RIFFLE(0)

RIFFLE/RUN EMBEDDEDNESS: EXTENSIVE(-1); MODERATE(0); LOW(1); NONE(2); NO RIFFLE(0)

COMMENTS:

6) GRADIENT (FEET/MILE)(10): 0.28 % POOL _____ % RIFFLE _____ %RUN 100 GRADIENT SCORE 6

STREAM: Ohio River Myers Pool RIVER MILE IN 839.50 Night DATE: 9/14/2005 QHEI SCORE 27

1) SUBSTRATE: (Check ONLY Two Substrate Type Boxes: Check all types present)(20) SUBSTRATE SCORE 2

TYPE		POOL	RIFFLE			POOL	RIFFLE
	BLDER/SLAB(10)				GRAVEL(7)		
	BOULDER(9)				SAND(6)	X	
	COBBLE(8)				BEDROCK(5)		
	HARDPAN(4)				DETRITUS(3)	X	
X	MUCK/SILT(2)	X			ARTIFIC(0)		

SUBSTRATE ORIGIN (all): LIMESTONE(1); RIP/RAP(0); HARDPAN(0); TILLS(1); SANDSTONE(0); SHALE(-1); COAL FINES(-2)

SILT COVER (one): SILT-HEAVY(-2); SILT-NORM(0) X; SILT-MOD(-1); SILT-FREE(1)

Extent of Embeddedness (check one): X EXTENSIVE(-2); LOW(0); MODERATE(-1); NONE(1)

TOTAL NUMBER OF SUBSTRATE TYPES: >4(2); X <4(0)

NOTE: (Ignore sludge that originates from point sources: score is based on natural substrates)

COMMENTS:

2) INSTREAM COVER: (20) COVER SCORE 5

TYPE(Check all that apply): UNDERCUT BANKS(1); X DEEP POOLS(2); OXBOWS(1); OVERHANGING VEGETATION(1); ROOTWADS(1); AQUATIC MACROPHYTES(1); X SHALLOWS (IN SLOW WATER)(1); BOULDERS(1); X LOGS OR WOODY DEBRIS(1)

AMOUNT (Check only one or Check 2 and AVERAGE): EXTENSIVE >75%(11); MODERATE 25-75%(7); SPARSE 5-25%(3); X NEARLY ABSENT <5%(1)

COMMENTS:

3) CHANNEL MORPHOLOGY: (Check ONLY ONE per Category or Check 2 and AVERAGE)(20) 10

SINUOSITY: HIGH(4); MODERATE(3); LOW(2); X NONE(1)

DEVELOPMENT: EXCELLENT(7); GOOD(5); FAIR(3); X POOR(1)

CHANNELIZATION: X NONE(6); RECOVERED(4); RECOVERING(3); RECENT OR NO RECOVERY(1)

STABILITY: HIGH(3); X MODERATE(2); LOW(1)

MODIFICATION/OTHER: SNAGGING; RELOCATION; CANOPY REMOVAL; DREDGING; ONE SIDE CHANNEL MODIFICATION; IMPOUND; ISLAND; LEVEED; BANK SHAPING

COMMENTS:

4) RIPARIAN ZONE AND BANK EROSION: (Check ONE box or Check 2 and AVERAGE per bank) (10) RIPARIAN SCORE 4

River Right Looking Downstream

RIPARIAN WIDTH (per bank)

L	R	(per bank)
		WIDE>150ft.(4)
		MODERATE 30-150 ft.(3)
X	X	NARROW 15-30 ft.(2)
		VERY NARROW 3-15 ft.(1)
		NONE(0)

EROSION/RUNOFF-FLOODPLAIN QUALITY

L	R	(most predominant per bank)	L	R	(per bank)
		FOREST, SWAMP(3)			URBAN OR INDUSTRIAL(0)
X	X	OPEN PASTURE/ROW CROP(0)			SHURB OR OLD FIELD(2)
		RESID.,PARK,NEW FIELD(1)			CONSERV. TILLAGE(1)
		FENCED PASTURE(1)			MINING/CONSTRUCTION(0)

BANK EROSION

L	R	(per bank)
		NONE OR LITTLE(3)
X	X	MODERATE(2)
		HEAVY OR SEVERE(1)

COMMENTS:

5) POOL/GLIDE AND RIFFLE/RUN QUALITY (12) **NO POOL = 0** POOL SCORE 0

MAX. DEPTH (Check 1): >4 ft.(6); 2.4-4 ft.(4); 1.2-2.4 ft.(2); <1.2 ft.(1); <0.6 ft.(Pool=0)(0)

MORPHOLOGY (Check 1): POOL WIDTH>RIFFLE WIDTH(2); POOL WIDTH=RIFFLE WIDTH(1); POOL WIDTH<RIFFLE WIDTH(0)

POOL/RUN/RIFFLE CURRENT VELOCITY (Check all that Apply): TORRENTIAL(-1); FAST(1); MODERATE(1); SLOW(1); EDDIES(1); INTERSTITIAL(-1); INTERMITTENT(-2)

COMMENTS:

RIFFLE SCORE 0

RIFFLE/RUN DEPTH: GENERALLY >4 in. MAX.>20 in.(4); GENERALLY >4 in. MAX.<20 in.(3); GENERALLY 2-4 in.(1); GENERALLY <2 in.(Riffle=0)(0)

RIFFLE/RUN SUBSTRATE: STABLE (e.g., Cobble,Boulder)(2); MOD. STABLE (e.g., Pea Gravel)(1); UNSTABLE (Gravel, Sand)(0); NO RIFFLE(0)

RIFFLE/RUN EMBEDDEDNESS: EXTENSIVE(-1); MODERATE(0); LOW(1); NONE(2); NO RIFFLE(0)

COMMENTS:

6) GRADIENT (FEET/MILE)(10) 0.28 % POOL _____ % RIFFLE _____ % RUN 100 GRADIENT SCORE 6

STREAM: Ohio River Myers Pool RIVER MILE KY 839.50 Night DATE: 9/14/2005 QHEI SCORE 27

1) SUBSTRATE: (Check ONLY Two Substrate Type Boxes: Check all types present)(20) SUBSTRATE SCORE 2

TYPE		POOL	RIFFLE			POOL	RIFFLE
	BLDER/SLAB(10)				GRAVEL(7)		
	BOULDER(9)				SAND(6)	X	
	COBBLE(8)				BEDROCK(5)		
	HARDPAN(4)				DETRITUS(3)	X	
X	MUCK/SILT(2)	X			ARTIFIC(0)		

TOTAL NUMBER OF SUBSTRATE TYPES: [ ] >4(2) [X] <4(0)

SUBSTRATE ORIGIN (all): [ ] LIMESTONE(1) [ ] RIP/RAP(0) [ ] TILLS(1) [ ] HARDPAN(0) [ ] SANDSTONE(0) [ ] SHALE(-1) [ ] COAL FINES(-2)

SILT COVER (one): [ ] SILT-HEAVY(-2) [ ] SILT-MOD(-1) [X] SILT-NORM(0) [ ] SILT-FREE(1)

Extent of Embeddedness (check one): [X] EXTENSIVE(-2) [ ] MODERATE(-1) [ ] LOW(0) [ ] NONE(1)

NOTE: (Ignore sludge that originates from point sources: score is based on natural substrates)

COMMENTS:

2) INSTREAM COVER: (20) COVER SCORE 5

TYPE(Check all that apply): [ ] UNDERCUT BANKS(1) [ ] OVERHANGING VEGETATION(1) [X] SHALLOWS (IN SLOW WATER)(1) [X] DEEP POOLS(2) [ ] ROOTWADS(1) [ ] BOULDERS(1) [ ] OXBOWS(1) [ ] AQUATIC MACROPHYTES(1) [X] LOGS OR WOODY DEBRIS(1)

AMOUNT (Check only one or Check 2 and AVERAGE): [ ] EXTENSIVE >75%(11) [ ] MODERATE 25-75%(7) [ ] SPARSE 5-25%(3) [X] NEARLY ABSENT <5%(1)

COMMENTS:

3) CHANNEL MORPHOLOGY: (Check ONLY ONE per Category or Check 2 and AVERAGE)(20) 10

SINUOSITY: [ ] HIGH(4) [ ] MODERATE(3) [ ] LOW(2) [X] NONE(1)

DEVELOPMENT: [ ] EXCELLENT(7) [ ] GOOD(5) [ ] FAIR(3) [X] POOR(1)

CHANNELIZATION: [X] NONE(6) [ ] RECOVERED(4) [ ] RECOVERING(3) [ ] RECENT OR NO RECOVERY(1)

STABILITY: [ ] HIGH(3) [X] MODERATE(2) [ ] LOW(1)

MODIFICATION/OTHER: [ ] SNAGGING [ ] RELOCATION [ ] CANOPY REMOVAL [ ] DREDGING [ ] ONE SIDE CHANNEL MODIFICATION [ ] IMPOUND [ ] ISLAND [ ] LEVEED [ ] BANK SHAPING

COMMENTS:

4) RIPARIAN ZONE AND BANK EROSION: (Check ONE box or Check 2 and AVERAGE per bank) (10) RIPARIAN SCORE 4

River Right Looking Downstream

RIPARIAN WIDTH (per bank)

L	R	(per bank)
		WIDE>150ft.(4)
		MODERATE 30-150 ft.(3)
X	X	NARROW 15-30 ft.(2)
		VERY NARROW 3-15 ft.(1)
		NONE(0)

EROSION/RUNOFF-FLOODPLAIN QUALITY

L	R	(most predominant per bank)
		FOREST, SWAMP(3)
X	X	OPEN PASTURE/ROW CROP(0)
		RESID.,PARK,NEW FIELD(1)
		FENCED PASTURE(1)

L	R	(per bank)
		URBAN OR INDUSTRIAL(0)
		SHURB OR OLD FIELD(2)
		CONSERV. TILLAGE(1)
		MINING/CONSTRUCTION(0)

BANK EROSION

L	R	(per bank)
		NONE OR LITTLE(3)
X	X	MODERATE(2)
		HEAVY OR SEVERE(1)

COMMENTS:

5) POOL/GLIDE AND RIFFLE/RUN QUALITY (12) **NO POOL = 0** POOL SCORE 0

MAX. DEPTH (Check 1): [ ] >4 ft.(6) [ ] 2.4-4 ft.(4) [ ] 1.2-2.4 ft.(2) [ ] <1.2 ft.(1) [ ] <0.6 ft.(Pool=0)(0)

MORPHOLOGY (Check 1): [ ] POOL WIDTH>RIFFLE WIDTH(2) [ ] POOL WIDTH=RIFFLE WIDTH(1) [ ] POOL WIDTH<RIFFLE WIDTH(0)

POOL/RUN/RIFFLE CURRENT VELOCITY (Check all that Apply): [ ] TORRENTIAL(-1) [ ] FAST(1) [ ] MODERATE(1) [ ] SLOW(1) [ ] EDDIES(1) [ ] INTERSTITIAL(-1) [ ] INTERMITTENT(-2)

COMMENTS:

RIFFLE SCORE 0

RIFFLE/RUN DEPTH: [ ] GENERALLY >4 in. MAX.>20 in.(4) [ ] GENERALLY >4 in. MAX.<20 in.(3) [ ] GENERALLY 2-4 in.(1) [ ] GENERALLY <2 in.(Riffle=0)(0)

RIFFLE/RUN SUBSTRATE: [ ] STABLE (e.g., Cobble,Boulder)(2) [ ] MOD. STABLE (e.g., Pea Gravel)(1) [ ] UNSTABLE (Gravel, Sand)(0) [ ] NO RIFFLE(0)

RIFFLE/RUN EMBEDDEDNESS: [ ] EXTENSIVE(-1) [ ] MODERATE(0) [ ] LOW(1) [ ] NONE(2) [ ] NO RIFFLE(0)

COMMENTS:

6) GRADIENT (FEET/MILE)(10) 0.28 % POOL _____ % RIFFLE _____ _____ GRADIENT SCORE 6